

Notice of Allowability

Application No.

10/722,245

Examiner

Sonny TRINH

Applicant(s)

KNOPIK ET AL.

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/25/03.
2. ☒ The allowed claim(s) is/are 1-9, 13-20 (claims 13-20 have been re-numbered to 10-17 respectively).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Paul F. Rusyn (Reg. No. **42,118**) on 04/06/2006.

Examiner's Amendment

2. The application has been amended as follows:

In the claims:

Please cancel **claims 10-12**.

(End of Examiner's Amendment)

Allowable Subject Matter

3. **Claims 1-9, 13-20** are allowed, claims 13-20 have been re-numbered to 10-17 respectively.

The following is an examiner's statement of reasons for allowance:

The present invention relates to a radiofrequency communication unit, and in particular a radiofrequency communication unit for replacing a cable link between two electronic devices with a radio link when the distance is small between the two devices.

The instant application is directed to an non-obvious improvement over the invention described in Pat. No. 6,181,278 to Kakimoto et al. Regarding claim 1, the improvement comprising a first dielectric substrate on the upper substrate of which is arranged a first conductive antenna layer; a second dielectric substrate on the lower surface of which are arranged circuit elements comprising a chip connected to input/output pads of the unit by portions of a second conductive layer, and comprising a radiofrequency antenna line connected to the chip; and a third screen conductive layer arranged between the first and second substrates, provided with a slot to couple the antenna line to the antenna layer, this conductive layer being floating; in which the areas of the lower surface of the second dielectric substrate on which are not arranged the circuit elements are covered with grounded portions of the second conductive layer, one at least of the pads being connected to ground and each of the other pads being grounded by a capacitor forming a short-circuit for radiofrequencies; the thickness and the nature of the second substrate being chosen by taking into account the surface of said portions and of said pads for the screen layer to be coupled to ground by a capacitor forming a short-circuit for radiofrequencies.

Regarding claim 5, the improvement comprising a first antenna layer formed on a first surface of the substrate structure; a second antenna layer formed on a second surface of the substrate structure; a first conductive layer formed between the first and

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second antenna layers and including an opening formed in the first conductive layer adjacent the second antenna layer; a second conductive layer formed on a third surface of the substrate structure, the second conductive layer being adapted to be coupled to a reference voltage source; and first conductive segments formed on a fourth surface of the substrate structure, the first conductive portions being positioned relative to the second conductive layer to form respective first capacitors between each segment and the second conductive layer, and the first conductive segments being positioned relative to the first conductive layer to form respective second capacitors between each segment and the first conductive layer, each of the first and second capacitors having a relatively small impedance at an operating frequency of the antenna structure.

Regarding claim 13, the improvement comprising an electronic system including a wireless communications unit, the communications unit comprising: an antenna structure including a substrate structure, the antenna structure including, a first antenna layer formed on a first surface of the substrate structure; a second antenna layer formed on a second surface of the substrate structure; a first conductive layer formed between the first and second antenna layers and including an opening formed in the first conductive layer adjacent the second antenna layer, a second conductive layer formed on a third surface of the substrate structure, the second conductive layer being adapted to be coupled to a reference voltage source; and first conductive segments formed on a fourth surface of the substrate structure, the first conductive portions being positioned relative to the second conductive layer to form respective first capacitors between each segment and the second conductive layer, and the first conductive segments being

positioned relative to the first conductive layer to form respective second capacitors between each segment and the first conductive layer, each of the first and second capacitors having a relatively small impedance at an operating frequency of the antenna structure; and a communications chip coupled to the conductive segments and the second antenna layer.

Regarding claim 16, Kakimoto also fails to teach or fairly suggest a method of transmitting electromagnetic signals, the method comprising: forming a first antenna structure; forming a second antenna structure; forming a conductive structure between the first and second antenna structures, the conductive structure including an opening adjacent the second antenna structure and being electrically isolated from the first and second antenna structures at direct voltages and currents; applying electric signals to the second antenna structure that cause the second antenna structure to generate first electromagnetic signals that propagate through the opening in the conductive structure, the first electromagnetic signals having a frequency; transmitting second electromagnetic signals from the first antenna structure responsive to the first electromagnetic signals propagating through the opening; and capacitively coupling the conductive structure to a reference voltage for signals incident on the conductive structure having the frequency.

Claims 2-4 are allowed by virtue of their dependencies on claim 1.

Claims 6-9 are allowed by virtue of their dependencies on claim 5.

Claims 14-15 are allowed by virtue of their dependencies on claim 13.

Claims 17-20 are allowed by virtue of their dependencies on claim 16.

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonny TRINH whose telephone number is 571-272-7927. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward URBAN can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/23/06


SONNY TRINH
PRIMARY EXAMINER